



MID-TENN ENGINEERING COMPANY

June 16, 2015

Mr. Johnny Walker, Environmental Coordinator
Division of Water Resources
Tennessee Department of Environment and Conservation
1221 South Willow Avenue
Cookeville, Tennessee 38506

RE: STORM WATER POLLUTION PREVENTION PLAN
SONNY SPEARS PROPOSED POULTRY HOUSES
CLAY COUNTY, TENNESSEE

Dear Mr. Walker:

Please find enclosed one set of the above referenced Storm Water Pollution Prevention Plan for your review and approval. The plan reflects a total of 4.80 acres that will be disturbed during construction.

We have also included the executed Notice of Intent for Construction Activity and a check in the amount of \$250.00 from Sonny Spears. The anticipated start of construction will be September 2015.

Please review the application and respond at your earliest convenience. If you have any questions or concerns, feel free to contact me at (615) 666-2385 or e-mail ewhite@midtennengineering.com. Thank you for your consideration in this matter.

Sincerely,

Evan J. White, P.E.

Enclosures



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Water Resources

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

RECEIVED

JUL 08 2015

Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharges from Construction Activities (TNR100000)

ENVIRONMENT & CONSERVATION
COOKEVILLE FIELD OFFICE

Site or Project Name: Sonny Spears Poultry Houses		Existing NPDES Tracking Number: TNR	
Street Address or Location: 12 Line Creek Rd.		Start date: September 2015	
		Estimated end date: March 2016	
Site Activity Description: Site Grading for two poultry houses		Latitude (dd.dddd): 36.6154	
		Longitude (dd.dddd): -85.7325	
County(ies): Clay	MS4 Jurisdiction:	Acres Disturbed: 4.80	
		Total Acres: 4.80	
Does a topographic map show dotted or solid blue lines <input checked="" type="checkbox"/> and/or wetlands <input type="checkbox"/> on or adjacent to the construction site?			
If wetlands are located on-site and may be impacted, attach wetlands delineation report.			
If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP permit No.:			
Receiving waters: Line Creek, Barren River Watershed			
Attach the SWPPP with the NOI <input checked="" type="checkbox"/> SWPPP Attached		Attach a site location map <input checked="" type="checkbox"/> Map Attached	
Site Owner/Developer Entity (Primary Permittee - person, company, or legal entity that has operational or design control over construction plans and specifications): Sonny Spears			
Site Owner/Developer Signatory (V.P. level/higher - individual responsible for site - signs certification below):		Signatory's Title or Position (V.P. level/higher - signs certification below):	
Mailing Address: 12 Line Creek Rd.		City: Red Boiling Springs	State: TN Zip: 37150
Phone: 931-397-4382	Fax:	E-mail:	
Optional Contact: Evan J. White		Title or Position: Consultant	
Mailing Address: 648 Highway 52 Bypass W.		City: Lafayette	State: TN Zip: 37083
Phone: 615-666-2385	Fax: 615-666-2519	E-mail: ewhite@midtennengineering.com	
Owner or Developer Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)			
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.			
Owner or Developer Name: (print or type) Sonny Spears		Signature:	Date: 07-01-15
Contractor(s) Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)			
I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated.			
Contractor company name (print or type):			
Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	
Other Contractor company name (print or type):			
Other Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	

OFFICIAL STATE USE ONLY

Received Date:	Reviewer:	Field Office:	Permit Number TNR 171852	Exceptional TN Water:
Fee(s):	T & E Aquatic Flora and Fauna:	Impaired Receiving Stream:	Notice of Coverage Date:	



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
ENVIRONMENTAL FIELD OFFICE**

**1221 South Willow Avenue
Cookeville, TN 38501**

(931)432-4015 STATEWIDE 1-888-891-8332 (931)432-6952

Receipt: EAC-CK-11240

Date of Receipt: 08-Jul-2015 12:57 pm

Created By: Alicia Bowman (BG56012)

County: Clay

EFO/Office: Cookeville Field Office

Received From: Sonny Spears

Company/Affiliation: Sonny Spears Poultry Houses

Recipient Address: 12 Line Creek Rd
RED BOILING SPRINGS, TN- 37150

Amount Received: \$250.00

Method of Payment: CHECK

Check Number: 232

Comments: NOI - TNR171852 - Sonny Spears Poultry Houses - 12 Line Creek Rd. - Clay County

Division	Description	TDEC Code	Quantity	Unit Price	Line Total
WPC	WPC-NOI \$250 Permit Application	43.340.F02	1	\$250.00	\$250.00

Receipt Total: \$250.00

Storm Water Pollution Prevention Plan

Sonny Spears Poultry Houses
Red Boiling Springs, Tennessee

Prepared For:

Mr. Sonny Spears, Owner
12 Line Creek Rd.
Red Boiling Springs, Tennessee 37150



June 2015



Prepared By:

Evan J. White, P.E., TNEPSC Certification No. 121745
Mid-Tenn Engineering Company
648 Highway 52 Bypass West ~ Lafayette, Tennessee 37083
Phone: 615.666.2385 ~ Fax: 615.666.2519



STORM WATER POLLUTION PREVENTION PLAN

SITE DESCRIPTION

Project Name and Location: (Latitude, Longitude, or Address)	Owner Name and Address:
Sonny Spears Poultry Houses Red Boiling Springs, Clay County, Tennessee Latitude <u>36° 36' 55.52" N</u> , Longitude <u>85° 43' 57.13" W</u>	Sonny Spears 12 Line Creek Rd. Red Boiling Springs, Tennessee 37150

Description: (Purpose and Types of Soil Disturbing Activities)

This project will consist of the development of 4.80 acres, which is presently a row crop field with corn cover. The project will involve the installation of two 66-ft. x 600-ft. poultry house. The estimated time of construction beginning is September 2015. See **Appendix A** for a Project Location Map.

The soil disturbing activities will include clearing, grubbing, grading, filling, excavating, and draining operations. The proposed construction site consists of the following types of soils:

1. MtB2 – Mountview silt loam, 2 to 5 percent slopes, with a percent of area of interest (AOI) of 51.4%.
2. MtC2 – Mountview silt loam, 5 to 12 percent slopes, eroded, with a percent of AOI of 48.6%.

A Soil Map and descriptions can be found in **Appendix B**.

Runoff Coefficient:	The final coefficient of runoff for this phase of construction will be <u>CN=86</u> .
Site Area:	The proposed site disturbance area will be approximately <u>4.80</u> acres
Name of Receiving Waters:	The entire site will drain into an unnamed tributary to Line Creek, which eventually flows into Barren River.

A summary of Hydraulic Calculations can be found in **Appendix C**.

Sequence of Major Activities:

The order of activities will be as follows:

1. Install silt fence and construction entrance as shown on Storm Water Pollution Prevention Plan.
2. Clearing and grubbing of site.
3. Strip and stockpile topsoil as necessary.
4. Stabilize denuded areas and stockpiles within 15 days of last construction activity in that area.

5. Complete grading and install permanent structures and seeding.
6. Remove accumulated sediment from silt fence.
7. When all construction activity is complete and site is stabilized, remove silt fence and reseed any areas disturbed by its removal.

See **Appendix D** for a complete Construction Schedule.

CONTROLS

Stabilization Practices

Temporary Stabilization - Topsoil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 21 days will be stabilized with temporary seed and mulch no later than 15 days from the last construction activity in that area. The temporary seed shall be annual rye or wheat applied at the rate of 150 pounds per acre. Areas of the site, which are to be paved, will be temporarily stabilized by applying stone sub-base until bituminous pavement can be applied.

Permanent Stabilization - Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 15 days after the last construction activity. The permanent seed mix shall consist of 110 lbs/acre of a mixture containing 55% Kentucky 31 Fescue, 20% English Rye, 15% Korean Lespedeza, and 10% German Millet. Prior to seeding, 4,350 pounds of ground agricultural limestone and 870 pounds of 10-10-10 fertilizer shall be applied to each acre. After seeding, each area shall be mulched with 4,350 pounds per acre of straw. The straw mulch is to be tacked into place by a disk with blades set nearly straight, or by a method approved by the Engineer.

Structural Practices

Silt Fence Barrier - will be constructed along the toe of fill slopes, protecting streams and adjacent property owners.

All erosion and sediment control structures shall comply with the current edition of the Tennessee Erosion and Sediment Control Handbook of the Tennessee Department of Environment and Conservation, dated August 2012.

Storm Water Management

Storm water drainage will be detained by temporary sediment traps for the developed areas. The areas that are not developed will be graded on 2:1 or flatter slopes and stabilized with permanent seeding or plantings.

Additional Site Protection Measures

The unnamed tributary to Line Creek is located within the Barren River watershed. The "Total Maximum Daily Load" (TMDL) for E.Coli in the Barren River Watershed (HUC 05110002) from Clay, Jackson, Macon, and Sumner Counties, Tennessee, approved 10/23/2007, establishes the maximum allowable loading of pollutants for a waterbody that will allow the waterbody to maintain water quality standards.

Waste load allocations for NPDES regulated construction activities disturbing one or more acres should be implemented through Best Management Practices (BMPs) as specified by the General NPDES Permit for Stormwater Discharges Associated with Construction Activity.

Please refer to the Site Plan on Page 8 for details and to the remaining documents in this Plan for specifications and illustrations of all other BMPs.

OTHER CONTROLS

Waste Disposal

Waste Materials

All waste materials will be collected and stored in a securely maintained area or in roll-off waste containers. Contractor will contract with a licensed hauler to remove material and transport to a permitted landfill or transfer station weekly.

Hazardous Waste

All hazardous waste materials will be disposed of in the manner specified by local or State regulation or by the manufacturer. Site personnel will be instructed in these practices and the Contractor's superintendent(s) will be responsible for seeing that these practices are followed.

Sanitary Waste

All sanitary waste will be collected from the portable units a minimum of three times per week by a licensed sanitary waste management contractor, which will be contracted by the Design/Builder Contractor.

Offsite Vehicle Tracking

A stabilized construction entrance shall be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept daily to remove any excess mud, dirt or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with tarps.

TIMING OF CONTROLS/MEASURES

Areas where construction activity temporarily ceases for more than 21 days will be stabilized with a temporary seed and mulch within 15 days of the last disturbance. Once construction activity ceases

permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, the accumulated sediment will be removed from the trap.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Storm Water Pollution Prevention Plan reflects the Owner's requirements for storm water management and erosion and sediment control. To ensure compliance, this plan was prepared in accordance with the current edition of the Tennessee Erosion and Sediment Control Handbook of the Tennessee Department of Environment and Conservation, dated August 2012.

MAINTENANCE/INSPECTION PROCEDURES

Inspection and Maintenance Practices

These are the inspection and maintenance practices that will be used to maintain erosion prevention and sediment controls as applicable.

- Less than one half of the site will be denuded at one time.
- A rainfall gauge is required on the construction site. It should be read at least once a day at approximately the same time to get a 24 hour rainfall depth total, recorded in the rainfall log, and kept with the onsite storm water plan.
- All control measures will be inspected twice weekly at three-day intervals, before anticipated storm events expected to cause a significant amount of runoff, and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall, or 0.25 inches of rainfall in 15 minutes at the site.
- Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective.
- Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.
- Built up sediment will be removed from silt fence when it has reached one-half the height of the fence.
- Silt fence will be inspected for depth of sediment, tears, security of attachment to the fence posts, and to see that the fence posts are firmly in the ground.
- Diversion dike will be inspected and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.

- A maintenance inspection report will be made after each inspection and furnished to Engineer within 24 hours of inspection. A copy of the report forms are found in **Appendix F** of this Plan.
- The Contractor will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance reports.

Non-Storm Water Discharges

The Project will not provide non-storm water discharges from the site during the construction period.

INVENTORY FOR POLLUTION PREVENTION PLAN

The materials or substances listed below are expected to be present onsite during construction:

- Concrete
- Fertilizers
- Masonry Block
- Petroleum Based Products
- Wood

SPILL PREVENTION

Material Management Practices

The following material management practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

Good Housekeeping:

The following good housekeeping practices will be followed onsite during the construction project:

- An effort will be made to store only enough products required to do the job.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure such as a wire fence.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used before disposing of the container.
- Manufacturers' recommendations for proper use and disposal will be followed.

- Keep dumpsters covered to prevent trash from being blown out and into the stormwater system.
- The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.

Hazardous Products:

These practices are used to reduce the risks associated with hazardous materials:

- Hazardous waste shall be placed in closed containers and shall be shielded adequately to prevent dispersion of the waste by wind or water.
- Non-Hazardous waste shall be stored in containers separate from hazardous waste storage areas.
- Products will be kept in original containers unless they are not able to be resealed.
- Original labels and material safety data will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

Product Specific Practices

The following product specific practices will be followed onsite:

Petroleum Products:

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Drip pans will be installed under any leaky equipment, and materials in those pans should be collected and taken offsite for proper disposal. Lubricants, solvents and fuels will be stored in tightly sealed containers, which are clearly labeled, and placed in a covered area. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

Fertilizers:

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Paints: (Not applicable)

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers' instructions and State and local regulations.

Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site except in designated temporary sediment collection areas constructed for such purposes by the Contractor.

SPILL CONTROL PRACTICES

In addition to the good housekeeping and material management practices discussed in the previous sections, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills, regardless of size, of toxic or hazardous material will be reported to the appropriate State or local government agency.
- In the event that an oil spill or chemical release occurs during the performance of this contract, the Contractor is required to contact the National Response Center, telephone number 1-800-424-8802 as soon as possible. The Contractor shall comply with any instructions from the responding agency concerning containment and/or cleanup of the spill.
- In the event of a spill, the spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what cause it, and the cleanup measures will also be included.
- The Contractor's superintendent(s), responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer onsite.

See Enclosed Plans

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

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STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

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APPENDICES

Appendix A:	Location Map
Appendix B:	Soil Map with Descriptions
Appendix C:	Hydraulic Calculations
Appendix D:	Construction Schedule
Appendix E:	Executed Notice of Intent and Sample of Notice of Termination
Appendix F:	Samples of Inspection and Maintenance Report Forms
Appendix G:	Erosion Control Specifications
Appendix H:	Tennessee Erosion and Sediment Control Handbook (Owner and Contractor Only)
Appendix I:	Level II Erosion Prevention and Sediment Control Certification

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

CONSTRUCTION SITE STORM WATER CONTROL PLAN

1.01 GENERAL

- A. The purpose of this Storm Water Pollution Prevention Plan (SWPPP) is to reduce erosion and control runoff of stormwater from the facility. This Plan shall be closely followed in order to comply with all State of Tennessee, Department of Environment and Conservation, Division of Water Pollution Control Rules and Regulations, hereinafter referred to as the *Division*. A copy of this Plan shall be kept onsite at all times.
- B. This Plan addresses discharges of storm water runoff from land disturbed by construction activity, including clearing, grading and excavation, except operations that result in the disturbance of less than one acre of total land area, which are not part of a larger common plan of development or sale. It also applies to dewatering discharges from work areas at construction sites.
- C. The term "*Permittee*" shall mean the Owner who has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.
- D. The term "*Operator*" shall mean the Contractor with day-to-day operational control of those activities at a project which are necessary to ensure compliance with this Plan and permit conditions.

1.02 STORM WATER CONTROL

- A. Contractors of the *Permittee*, whose activities at the site may impact storm water discharges or controls, shall affirm, by signature of one who meets signatory requirements of this Plan.
- B. The *Permittee* shall certify that the named Contractor has been retained to perform the described construction-related services.

1.03 SUBMISSION OF PLAN

- A. A Notice of Intent (NOI) shall be submitted by the *Permittee* at least **30 days prior to the commencement of construction activities** (i.e., the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities).
- B. The NOI shall be prepared on the form provided in **Appendix B** of this Plan.
- C. The *Operator(s)* of the construction site shall sign the NOI. Persons who sign shall meet the criteria set forth in the "General Provisions" of this Plan, which is located on Page 9.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

CONDITIONS FOR DISCHARGE PERMIT

1.01 CONSTRUCTION MANAGEMENT TECHNIQUES

- A. The construction phase erosion and sediment controls shall be designed to retain sediment on site.
- B. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the *Operator* must replace or modify the control for site situations.
- C. If sediment escapes the construction site, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts (e.g., fugitive sediment that has escaped the construction site and has collected in street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). *Operators* shall not initiate remediation/restoration of a stream without consulting the *Division* first. This permit does not, however, authorize access to private property.
- D. Sediment should be removed from sediment traps, silt fences, sedimentation ponds, and other sediment controls as necessary, and must be removed when design capacity has been reduced by 50%.
- E. Litter, construction debris, and construction chemicals exposed to storm water shall be picked up prior to anticipated storm events (e.g. forecasted by local weather reports), or otherwise prevented from becoming a pollutant source for storm water discharges (e.g., screening outfalls, daily pick-up, etc). After use, silt fences should be removed or otherwise prevented from becoming a pollutant source for storm water discharges.
- F. Offsite material storage areas (also including overburden and stockpiles of dirt, etc.) used solely by the permitted project are considered a part of the project and is addressed in this Plan.
- G. Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed.
- H. Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.
- I. Construction must be sequenced to minimize the exposure time of graded or denuded areas.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

- B. Temporary or permanent soil stabilization shall be accomplished within 15 days after final grading or other earth work. Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable.

1.03 STRUCTURAL CONTROLS

- A. Structural controls shall not be placed in streams or wetlands except as authorized by a U. S. Army Corps of Engineers Section 404 permit and/or Tennessee Aquatic Resource Alteration Permit (ARAP).
- B. Erosion and sediment control measures shall be designed according to the size and slope of disturbed or drainage areas to detain runoff and trap sediment. In addition, erosion and sediment controls shall be designed to control the rainfall and runoff from a 2 year, 24 hour storm, as a minimum. *Operator* shall maintain a rain gauge at the site.
- C. For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm and runoff coefficient from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided until final stabilization of the site. When computing the number of acres draining into a common location, it is necessary to include flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls are not attainable, multiple, smaller sediment basins and/or sediment traps must be used.
- D. Discharges from sediment basins and traps must be through a pipe, well grassed or lined channel so that the discharge does not cause erosion.
- E. Muddy water to be pumped from excavation and work areas must be held in settling basins or filtered prior to its discharge into surface waters. Water must be discharged through a pipe, well grassed or lined channel or other equivalent means so that the discharge does not cause erosion and sedimentation.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

1.07 INSPECTIONS

- A. Inspections shall be done before anticipated storm events (or series of storm events such as intermittent showers over one or more days), and within 24 hours after the end of a storm event of 0.5 inches or greater, and at least once every fourteen calendar days. Where sites have been finally or temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow, ice, or frozen ground), such inspection only has to be conducted once per month.
- B. Inspections and associated, necessary repairs done 60 hours before a rain event constitute compliance with "before anticipated storm events," and inspections and repairs on a Friday meet the requirement for rain events over the weekend.
- C. Qualified personnel (provided by the *Operator* or cooperatively by multiple *Operators*) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.
- D. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly.
- E. Outfall points (where discharges from the site enter streams or wet weather conveyances) shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected if possible. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.
- F. Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than seven days after the need is identified. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.
- G. Based on the results of the inspection, this storm water plan may be revised as appropriate, but in no case later than 14 calendar days following the inspection. Such modifications shall provide for timely implementation of any changes to the Plan in no case later than 21 calendar days following the inspection.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

GENERAL PROVISIONS

1.01 SIGNATORY REQUIREMENTS

A. A Notice of Intent submitted to the *Division* shall be signed as follows:

1. For a corporation, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(b) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All reports required by the permit and other information requested by the *Division* or authorized representative of the *Division* shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the *Division*.

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

1.03 OIL AND HAZARDOUS SUBSTANCE LIABILITY

- A. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the *Operator* from any responsibilities, liabilities, or penalties to which the *Operator* is or may be subject under Section 311 of the Clean Water Act or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).
- B. The *Operator* is required to notify the National Response Center (NRC) (800-424-8802) and the Tennessee Emergency Management Agency (emergencies: 800-262-3300; non-emergencies: 800-262-3400) in accordance with the requirements of 40 CFR 117 and 40 CFR 301 as soon as he or she has knowledge of the discharge.
- C. The *Permittee* shall submit within 14 calendar days of knowledge of the release a written description to the appropriate Environmental Assistance Center of:
 - 1. The release (including the type and estimate of the amount of material released);
 - 2. The date that such release occurred;
 - 3. The circumstances leading to the release;
 - 4. What actions were taken to mitigate effects of the release; and
 - 5. Steps to be taken to minimize the chance of future occurrences.
- D. The Storm Water Pollution Prevention Plan must be modified within 14 calendar days of knowledge of the release to provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the Plan must be reviewed to identify measures to prevent reoccurrence of such releases and to respond to such releases, and the place must be modified where appropriate.

1.04 DISCHARGE QUALITY

- A. The construction activity shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 1200-4-3-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes but is not limited to the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated for that water body by Rule 1200-4-4. Use classifications for surface waters include fish and aquatic life, livestock watering and wildlife, recreation, irrigation, navigation, industrial water supply, and domestic water supply.

- B. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by an *Operator* only when necessary to achieve compliance with the conditions of the permit.

1.09 INSPECTION AND ENTRY

- A. The *Operator* shall allow authorized representatives of the Environmental Protection Agency, the *Division of Water Pollution Control*, or an authorized representative of the *Division*, or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law:
1. To enter upon the *Permittee's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit.
 2. To have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
 3. To inspect any facilities or equipment (including monitoring and control equipment).

1.10 PERMIT ACTIONS

- A. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the *Permittee* for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

1.11 LIABILITIES

- A. Civil and criminal liability
1. Except as provided in this permit, nothing in this permit shall be construed to relieve the *Operator* from civil or criminal penalties for noncompliance. Notwithstanding this permit, the *Operator* shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of waste water to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the discharger to conduct its waste water

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

permit are eliminated, or where storm water discharges have otherwise been eliminated, or where the operation of all storm water discharges at a facility changes, the *Permittee* must submit a Notice of Termination (NOT) that is signed in accordance with this Plan.

2. The *Permittee* must submit the NOT after completion of the construction activities and final stabilization of the site, or within 30 days after another operator has taken over the responsibilities of the site. Appropriate enforcement actions may be taken for permit violations when a *Permittee* submits a NOT but the *Permittee* has not transferred operational control to another *Operator* or the site has not undergone final stabilization.
3. The NOT shall be submitted on the *Division's* NOT form provided in **Appendix B** of this permit.
4. The *Operator* shall sign the following certification in accordance with the signatory requirements of this Plan:

"I certify under penalty of law that either: (a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act."

4. For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to insure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

CONSTRUCTION SITE STORM WATER CONTROL PLAN

1.01 GENERAL

- A. The purpose of this Storm Water Pollution Prevention Plan (SWPPP) is to reduce erosion and control runoff of stormwater from the facility. This Plan shall be closely followed in order to comply with all State of Tennessee, Department of Environment and Conservation, Division of Water Pollution Control Rules and Regulations, hereinafter referred to as the *Division*. A copy of this Plan shall be kept onsite at all times.
- B. This Plan addresses discharges of storm water runoff from land disturbed by construction activity, including clearing, grading and excavation, except operations that result in the disturbance of less than one acre of total land area, which are not part of a larger common plan of development or sale. It also applies to dewatering discharges from work areas at construction sites.
- C. The term "*Permittee*" shall mean the Owner who has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.
- D. The term "*Operator*" shall mean the Contractor with day-to-day operational control of those activities at a project which are necessary to ensure compliance with this Plan and permit conditions.

1.02 STORM WATER CONTROL

- A. Contractors of the *Permittee*, whose activities at the site may impact storm water discharges or controls, shall affirm, by signature of one who meets signatory requirements of this Plan.
- B. The *Permittee* shall certify that the named Contractor has been retained to perform the described construction-related services.

1.03 SUBMISSION OF PLAN

- A. A Notice of Intent (NOI) shall be submitted by the *Permittee* at least **30 days prior to the commencement of construction activities** (i.e., the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities).
- B. The NOI shall be prepared on the form provided in **Appendix B** of this Plan.
- C. The *Operator(s)* of the construction site shall sign the NOI. Persons who sign shall meet the criteria set forth in the "General Provisions" of this Plan, which is located on Page 9.

CONDITIONS FOR DISCHARGE PERMIT

1.01 CONSTRUCTION MANAGEMENT TECHNIQUES

- A. The construction phase erosion and sediment controls shall be designed to retain sediment on site.
- B. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the *Operator* must replace or modify the control for site situations.
- C. If sediment escapes the construction site, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts (e.g., fugitive sediment that has escaped the construction site and has collected in street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). *Operators* shall not initiate remediation/restoration of a stream without consulting the *Division* first. This permit does not, however, authorize access to private property.
- D. Sediment should be removed from sediment traps, silt fences, sedimentation ponds, and other sediment controls as necessary, and must be removed when design capacity has been reduced by 50%.
- E. Litter, construction debris, and construction chemicals exposed to storm water shall be picked up prior to anticipated storm events (e.g. forecasted by local weather reports), or otherwise prevented from becoming a pollutant source for storm water discharges (e.g., screening outfalls, daily pick-up, etc). After use, silt fences should be removed or otherwise prevented from becoming a pollutant source for storm water discharges.
- F. Offsite material storage areas (also including overburden and stockpiles of dirt, etc.) used solely by the permitted project are considered a part of the project and is addressed in this Plan.
- G. Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than **20 calendar days** prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed.
- H. Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.
- I. Construction must be sequenced to minimize the exposure time of graded or denuded areas.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

- B. Temporary or permanent soil stabilization shall be accomplished within 15 days after final grading or other earth work. Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable.

1.03 STRUCTURAL CONTROLS

- A. Structural controls shall not be placed in streams or wetlands except as authorized by a U. S. Army Corps of Engineers Section 404 permit and/or Tennessee Aquatic Resource Alteration Permit (ARAP).
- B. Erosion and sediment control measures shall be designed according to the size and slope of disturbed or drainage areas to detain runoff and trap sediment. In addition, erosion and sediment controls shall be designed to control the rainfall and runoff from a 2 year, 24 hour storm, as a minimum. *Operator* shall maintain a rain gauge at the site.
- C. For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm and runoff coefficient from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided until final stabilization of the site. When computing the number of acres draining into a common location, it is necessary to include flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls are not attainable, multiple, smaller sediment basins and/or sediment traps must be used.
- D. Discharges from sediment basins and traps must be through a pipe, well grassed or lined channel so that the discharge does not cause erosion.
- E. Muddy water to be pumped from excavation and work areas must be held in settling basins or filtered prior to its discharge into surface waters. Water must be discharged through a pipe, well grassed or lined channel or other equivalent means so that the discharge does not cause erosion and sedimentation.

1.07 INSPECTIONS

- A. Inspections shall be done before anticipated storm events (or series of storm events such as intermittent showers over one or more days), and within 24 hours after the end of a storm event of 0.5 inches or greater, and at least once every fourteen calendar days. Where sites have been finally or temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow, ice, or frozen ground), such inspection only has to be conducted once per month.
- B. Inspections and associated, necessary repairs done 60 hours before a rain event constitute compliance with "before anticipated storm events," and inspections and repairs on a Friday meet the requirement for rain events over the weekend.
- C. Qualified personnel (provided by the *Operator* or cooperatively by multiple *Operators*) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.
- D. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly.
- E. Outfall points (where discharges from the site enter streams or wet weather conveyances) shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected if possible. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.
- F. Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than seven days after the need is identified. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.
- G. Based on the results of the inspection, this storm water plan may be revised as appropriate, but in no case later than 14 calendar days following the inspection. Such modifications shall provide for timely implementation of any changes to the Plan in no case later than 21 calendar days following the inspection.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

GENERAL PROVISIONS

1.01 SIGNATORY REQUIREMENTS

- A. A Notice of Intent submitted to the *Division* shall be signed as follows:
1. For a corporation, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
 - (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
 - (b) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
 2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
 3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- B. All reports required by the permit and other information requested by the *Division* or authorized representative of the *Division* shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
1. The authorization is made in writing by a person described above and submitted to the *Division*.
 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

1.03 OIL AND HAZARDOUS SUBSTANCE LIABILITY

- A. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the *Operator* from any responsibilities, liabilities, or penalties to which the *Operator* is or may be subject under Section 311 of the Clean Water Act or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).
- B. The *Operator* is required to notify the National Response Center (NRC) (800-424-8802) and the Tennessee Emergency Management Agency (emergencies: 800-262-3300; non-emergencies: 800-262-3400) in accordance with the requirements of 40 CFR 117 and 40 CFR 301 as soon as he or she has knowledge of the discharge.
- C. The *Permittee* shall submit within 14 calendar days of knowledge of the release a written description to the appropriate Environmental Assistance Center of:
 - 1. The release (including the type and estimate of the amount of material released);
 - 2. The date that such release occurred;
 - 3. The circumstances leading to the release;
 - 4. What actions were taken to mitigate effects of the release; and
 - 5. Steps to be taken to minimize the chance of future occurrences.
- D. The Storm Water Pollution Prevention Plan must be modified within 14 calendar days of knowledge of the release to provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the Plan must be reviewed to identify measures to prevent reoccurrence of such releases and to respond to such releases, and the place must be modified where appropriate.

1.04 DISCHARGE QUALITY

- A. The construction activity shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 1200-4-3-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes but is not limited to the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated for that water body by Rule 1200-4-4. Use classifications for surface waters include fish and aquatic life, livestock watering and wildlife, recreation, irrigation, navigation, industrial water supply, and domestic water supply.

STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

- B. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by an *Operator* only when necessary to achieve compliance with the conditions of the permit.

1.09 INSPECTION AND ENTRY

- A. The *Operator* shall allow authorized representatives of the Environmental Protection Agency, the *Division of Water Pollution Control*, or an authorized representative of the *Division*, or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law:
1. To enter upon the *Permittee's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit.
 2. To have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
 3. To inspect any facilities or equipment (including monitoring and control equipment).

1.10 PERMIT ACTIONS

- A. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the *Permittee* for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

1.11 LIABILITIES

- A. Civil and criminal liability
1. Except as provided in this permit, nothing in this permit shall be construed to relieve the *Operator* from civil or criminal penalties for noncompliance. Notwithstanding this permit, the *Operator* shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of waste water to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the discharger to conduct its waste water

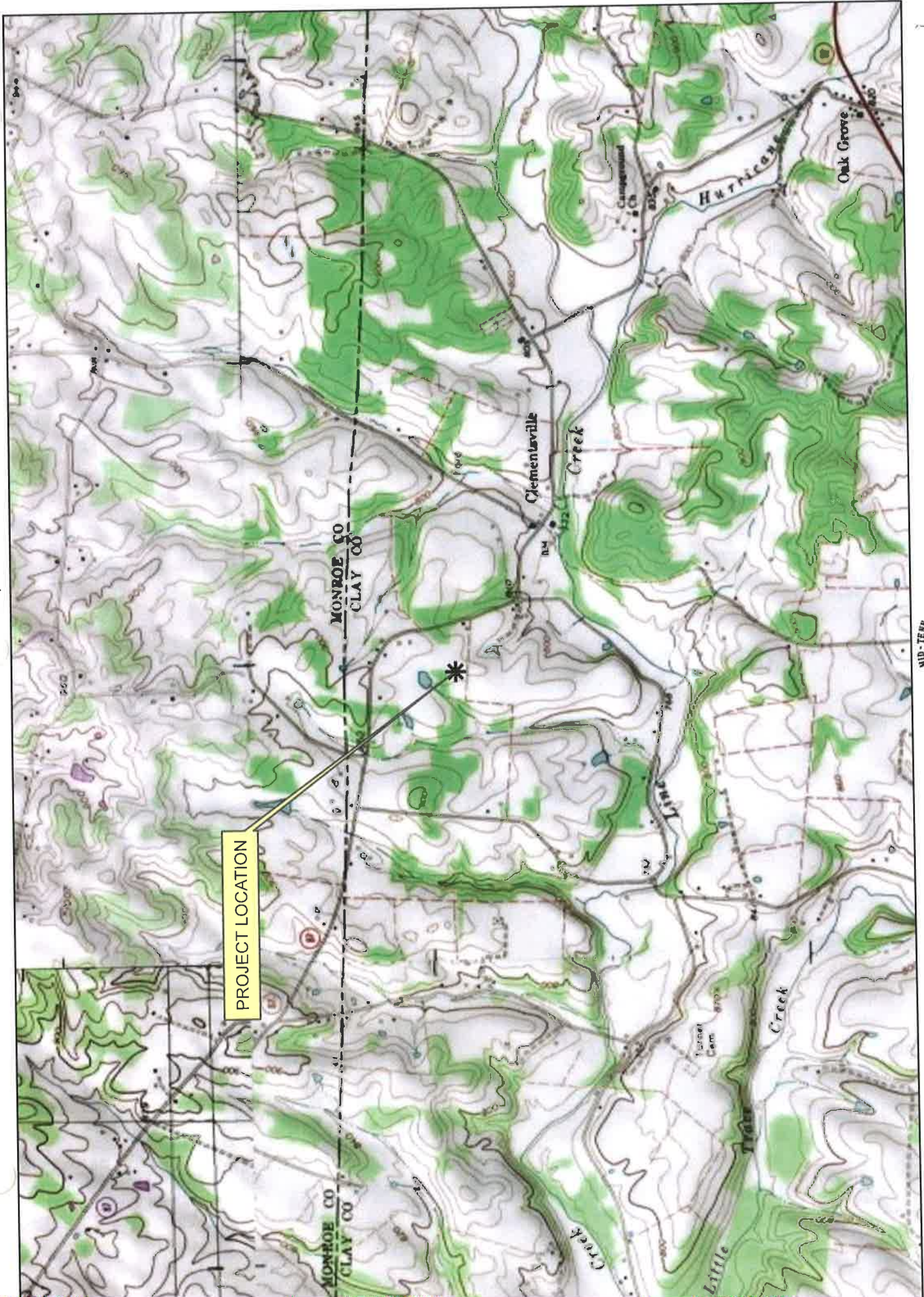
STORM WATER POLLUTION PREVENTION PLAN
Sonny Spears Poultry Houses, Red Boiling Springs, Tennessee

permit are eliminated, or where storm water discharges have otherwise been eliminated, or where the operation of all storm water discharges at a facility changes, the *Permittee* must submit a Notice of Termination (NOT) that is signed in accordance with this Plan.

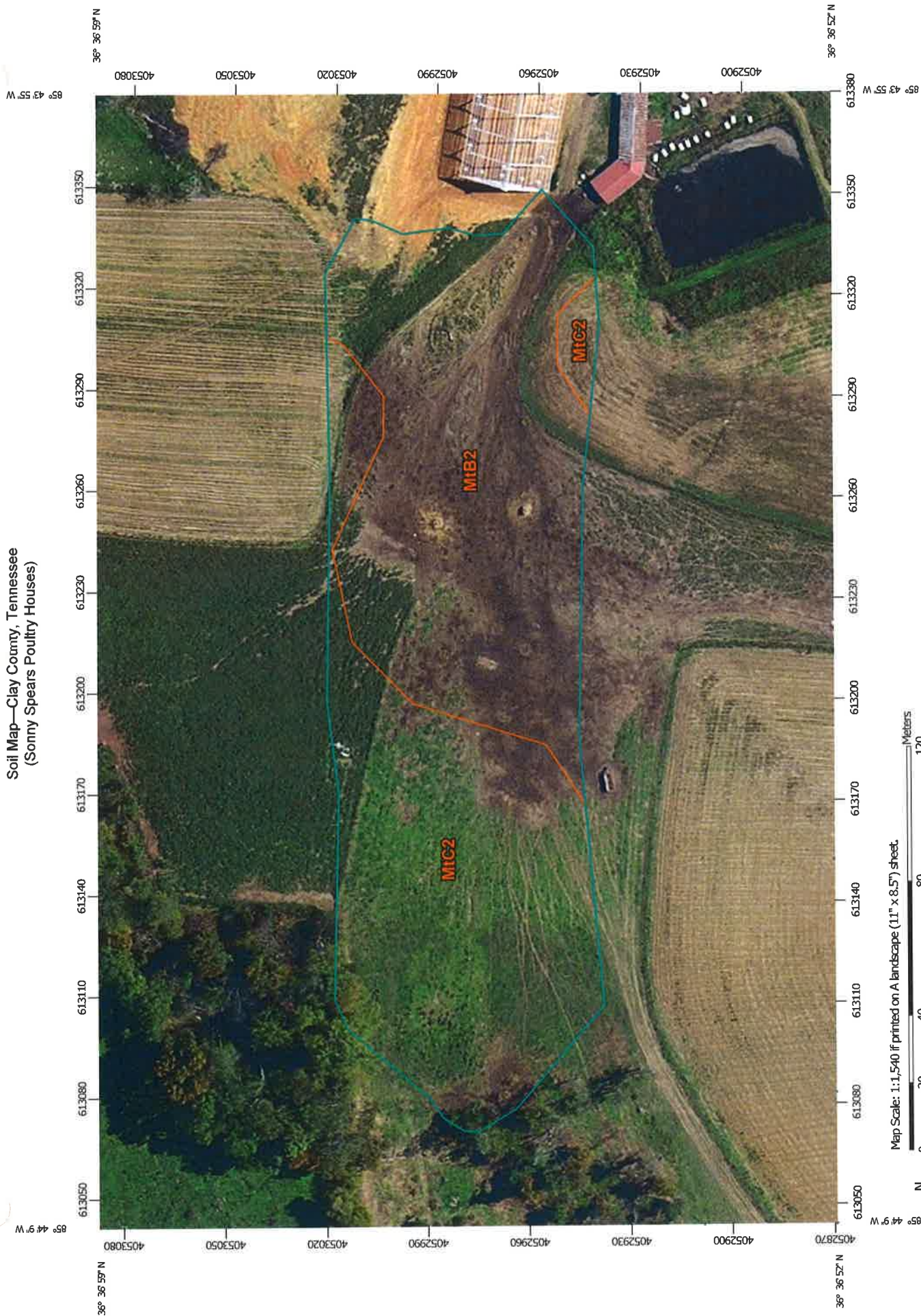
2. The *Permittee* must submit the NOT after completion of the construction activities and final stabilization of the site, or within 30 days after another operator has taken over the responsibilities of the site. Appropriate enforcement actions may be taken for permit violations when a *Permittee* submits a NOT but the *Permittee* has not transferred operational control to another *Operator* or the site has not undergone final stabilization.
3. The NOT shall be submitted on the *Division's* NOT form provided in **Appendix B** of this permit.
4. The *Operator* shall sign the following certification in accordance with the signatory requirements of this Plan:

"I certify under penalty of law that either: (a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act."

4. For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to insure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.



Soil Map—Clay County, Tennessee
(Sonny Spears Poultry Houses)





























Map Scale: 1:1,540 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

	Area of Interest (AOI)		Spill Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clay County, Tennessee
Survey Area Data: Version 15, Sep 16, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2011—Oct 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Clay County, Tennessee (TN027)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MtB2	Mountview silt loam, 2 to 5 percent slopes	2.5	51.4%
MtC2	Mountview silt loam, 5 to 12 percent slopes	2.3	48.6%
Totals for Area of Interest		4.8	100.0%

Clay County, Tennessee

MtB2—Mountview silt loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2td2w
Elevation: 520 to 1,410 feet
Mean annual precipitation: 37 to 58 inches
Mean annual air temperature: 57 to 68 degrees F
Frost-free period: 190 to 230 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mountview and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mountview

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over clayey residuum weathered from cherty limestone

Typical profile

Ap - 0 to 8 inches: silt loam
Bt - 8 to 25 inches: silt loam
B/E - 25 to 33 inches: silt loam
2Bt - 33 to 79 inches: clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 20 to 41 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Minor Components

Dickson

Percent of map unit: 8 percent

Landform: Flats

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Linear

Across-slope shape: Linear

Sengtown

Percent of map unit: 7 percent

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Data Source Information

Soil Survey Area: Clay County, Tennessee

Survey Area Data: Version 15, Sep 16, 2014

Clay County, Tennessee

MtC2—Mountview silt loam, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2td2x
Elevation: 520 to 1,410 feet
Mean annual precipitation: 37 to 58 inches
Mean annual air temperature: 57 to 68 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Mountview and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mountview

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over clayey residuum weathered from cherty limestone

Typical profile

Ap - 0 to 8 inches: silt loam
Bt - 8 to 25 inches: silt loam
B/E - 25 to 33 inches: silt loam
2Bt - 33 to 79 inches: clay

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 20 to 41 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Minor Components

Dickson

Percent of map unit: 8 percent

Landform: Flats

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Linear

Across-slope shape: Linear

Sengtown

Percent of map unit: 7 percent

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Data Source Information

Soil Survey Area: Clay County, Tennessee

Survey Area Data: Version 15, Sep 16, 2014

POST 25YR

Prepared by MID-TENN ENGINEERING COMPANY
HydroCAD® 6.00 s/n 002061 © 1986-2001 Applied Microcomputer Systems

Type II 24-hr Rainfall=5.79" - 25YR. STORM EVENT

Page 1

6/15/2015

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points

Runoff by SCS TR-20 method, UH=SCS, Type II 24-hr Rainfall=5.79"

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment Building: Building & Pad

Tc=5.0 min CN=88 Area=68,682 sf Runoff= 12.06 cfs 0.581 af

Pond 1P: DENTENTION

Peak Storage= 6,967 cf Inflow= 12.06 cfs 0.581 af
Primary= 3.37 cfs 0.580 af Outflow= 3.37 cfs 0.580 af

Runoff Area = 1.577 ac Volume = 0.581 af Average Depth = 4.42"

POST 25YR

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Type II 24-hr Rainfall=5.79" - 25YR. STORM EVENT

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6/15/2015

Subcatchment Building: Building & Pad

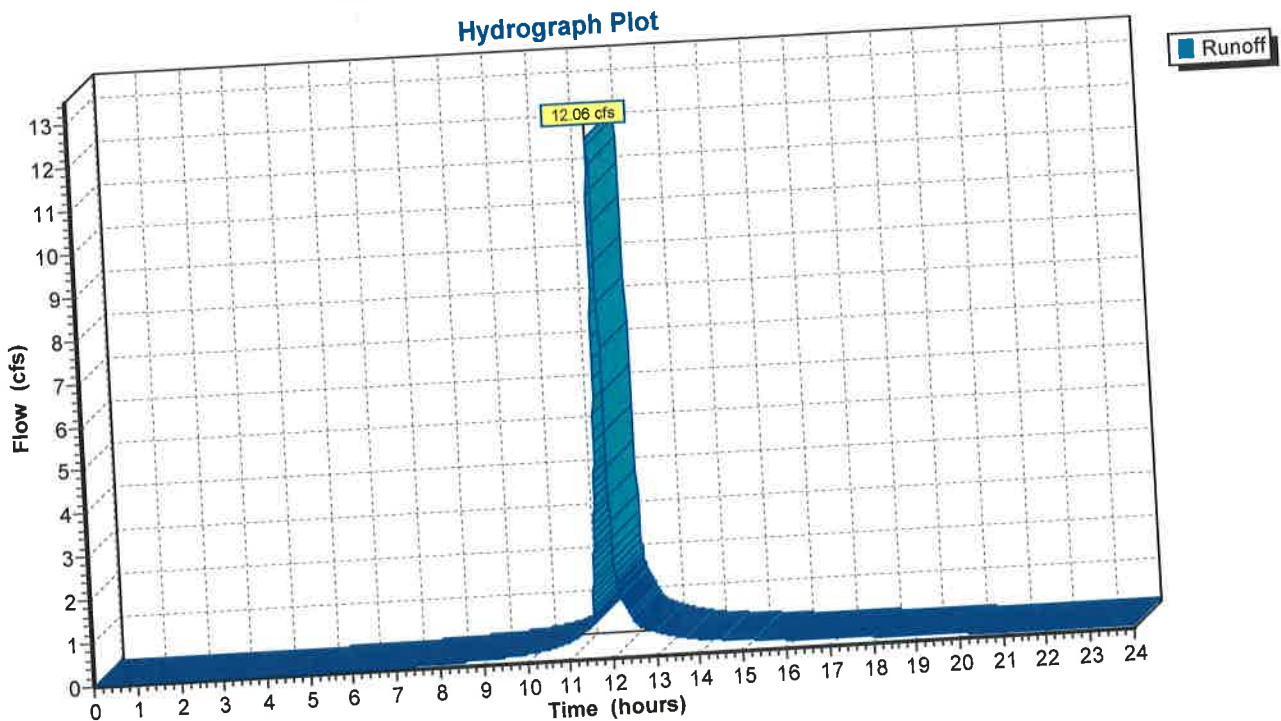
Runoff = 12.06 cfs @ 11.96 hrs, Volume= 0.581 af

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type II 24-hr Rainfall=5.79"

Area (sf)	CN	Description
39,600	98	Paved parking & roofs
29,082	74	>75% Grass cover, Good, HSG C
68,682	88	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Runoff

Subcatchment Building: Building & Pad



POST 25YR

Type II 24-hr Rainfall=5.79" - 25YR. STORM EVENT

Prepared by MID-TENN ENGINEERING COMPANY

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6/15/2015

Pond 1P: DENTENTION

Inflow = 12.06 cfs @ 11.96 hrs, Volume= 0.581 af
 Outflow = 3.37 cfs @ 12.08 hrs, Volume= 0.580 af, Atten= 72%, Lag= 7.2 min
 Primary = 3.37 cfs @ 12.08 hrs, Volume= 0.580 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 814.64' Storage= 6,967 cf

Plug-Flow detention time= 14.2 min calculated for 0.580 af (100% of inflow)

Storage and wetted areas determined by Prismatic sections

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
810.00	568	0	0
811.00	893	731	731
812.00	1,284	1,089	1,819
813.00	1,738	1,511	3,330
814.00	2,257	1,998	5,328
815.00	2,840	2,549	7,876

Primary OutFlow (Free Discharge)

↑1=Culvert

#	Routing	Invert	Outlet Devices
1	Primary	809.81'	8.0" x 42.9' long Culvert RCP, groove end w/headwall, Ke= 0.200 Outlet Invert= 809.38' S= 0.0100 '/' n= 0.012 Cc= 0.900

POST 25YR

Type II 24-hr Rainfall=5.79" - 25YR. STORM EVENT

Prepared by MID-TENN ENGINEERING COMPANY

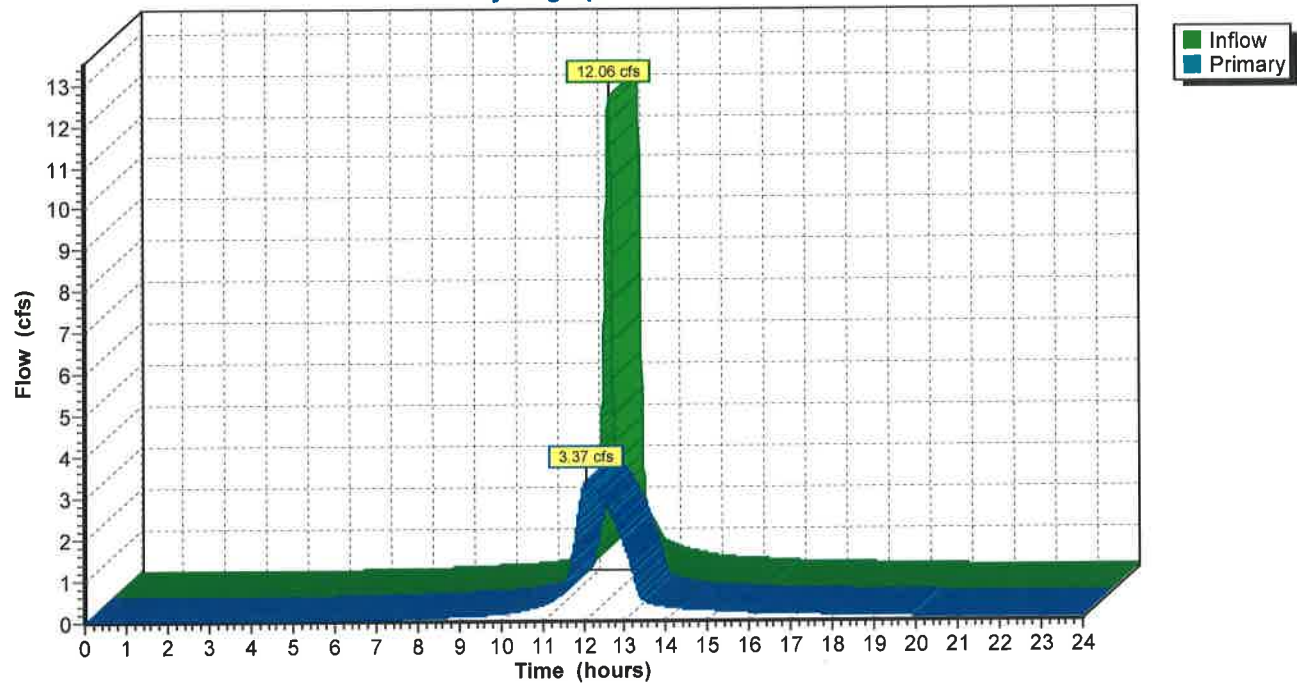
Page 4

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6/15/2015

Pond 1P: DENTENTION

Hydrograph Plot



The diagram illustrates the components and dimensions of a culvert structure. Key elements include:

- Grate**: The top surface of the culvert.
- Concrete Vault**: The main structure of the culvert.
- culvert x-section**: Two cross-sectional views showing the width (W) and depth (D).
- Section 1**: The inlet end of the culvert.
- Section 2**: The outlet end of the culvert.
- Slope S**: The slope of the approach road.
- exit flow**: The flow exiting the culvert.
- tailwater**: The water level downstream of the culvert.
- Dimensions**: Various dimensions are labeled, including M , L , B , d , and V .

D =	15.00	inches
Grooved End with Headwall		
OR:		
Height (Rise) =		ft.
Width (Span) =		ft.
1 : 1 Bevel w/ Headwall		
No =	1	
Inlet Elev =	820.63	ft. elev
Outlet Elev =	819.58	ft. elev
L =	52.00	ft.
n =	0.0120	
K _b =	0.00	
K _x =	1.00	

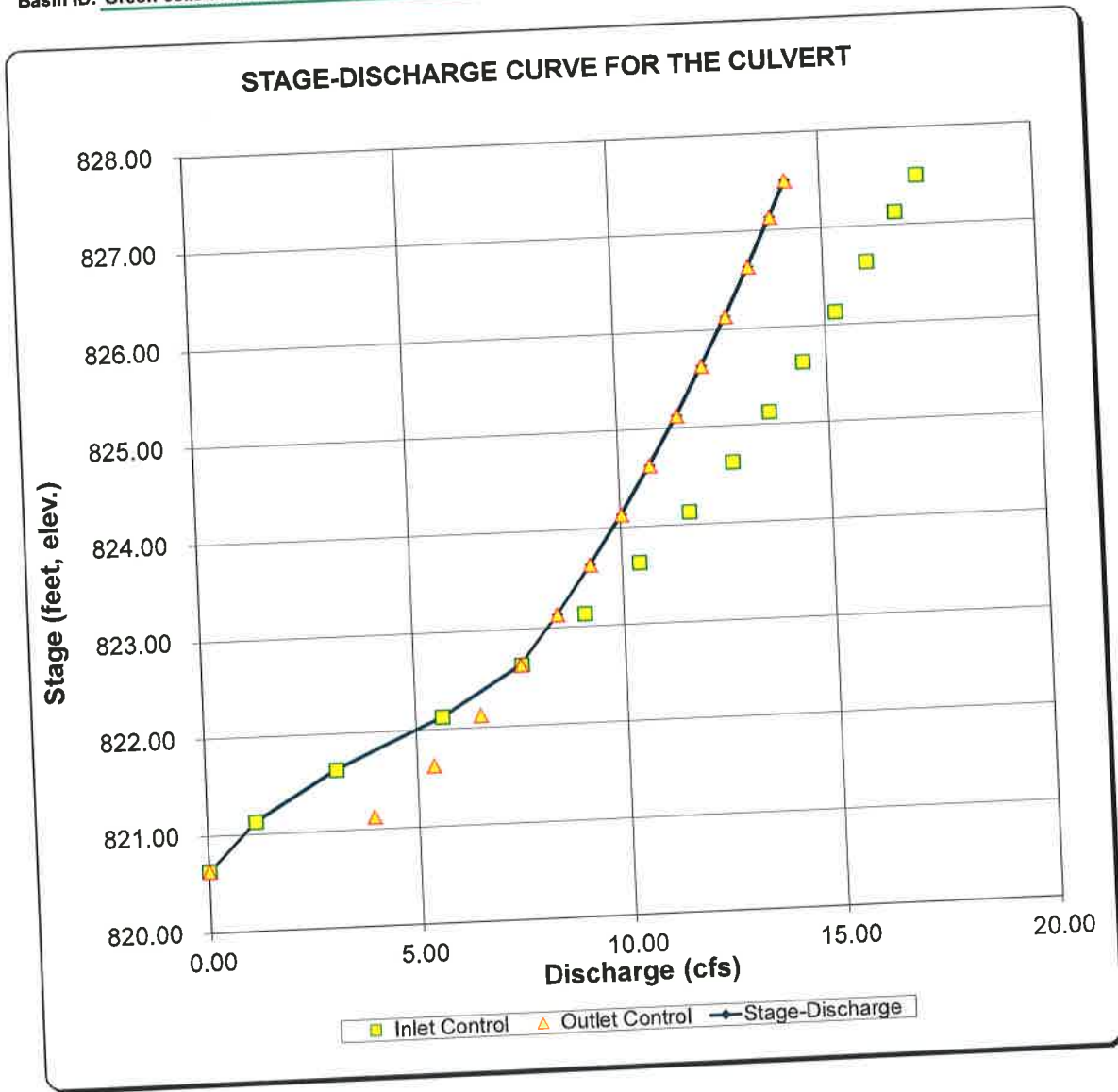
$K_o =$	0.20
$K_f =$	1.02
$K_s =$	2.22
$C_d =$	0.99
$KE_{kW} =$	-0.6422

[illegible]

0.8 seconds

CULVERT STAGE-DISCHARGE SIZING (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: Blue cells are for the user to enter data into
 Basin ID: Green cells are calculated values, filled from the VB macro code



$K_o =$	0.20
$K_f =$	1.06
$K_s =$	2.26
$C_d =$	0.95
$KE_{low} =$	-0.6170

The diagram illustrates a culvert structure. At the top, a cross-section of the culvert is shown with a rectangular box labeled 'culvert x-section' with width W and depth D . To its right is a circular cross-section labeled 'culvert x-section' with diameter B . Below these, a plan view of the culvert is shown, labeled 'Section 1' and 'Section 2'. The culvert is a rectangular box with length L and width W . The water level is indicated by a dashed line labeled 'Water level'. The culvert is supported by a concrete wall labeled 'Concrete Wall' and a concrete vault labeled 'Concrete Vault'. The culvert is shown on a slope labeled 'Slope S_0 '. The culvert is shown with a water level H and a water depth d . The culvert is shown with a water level H and a water depth d . The culvert is shown with a water level H and a water depth d .

No =	1	
Inlet Elev =	822.99	ft. elev.
Outlet Elev =	822.59	ft. elev.
L =	40.00	ft.
n =	0.0120	
K_b =	0.00	
K_x =	1.00	

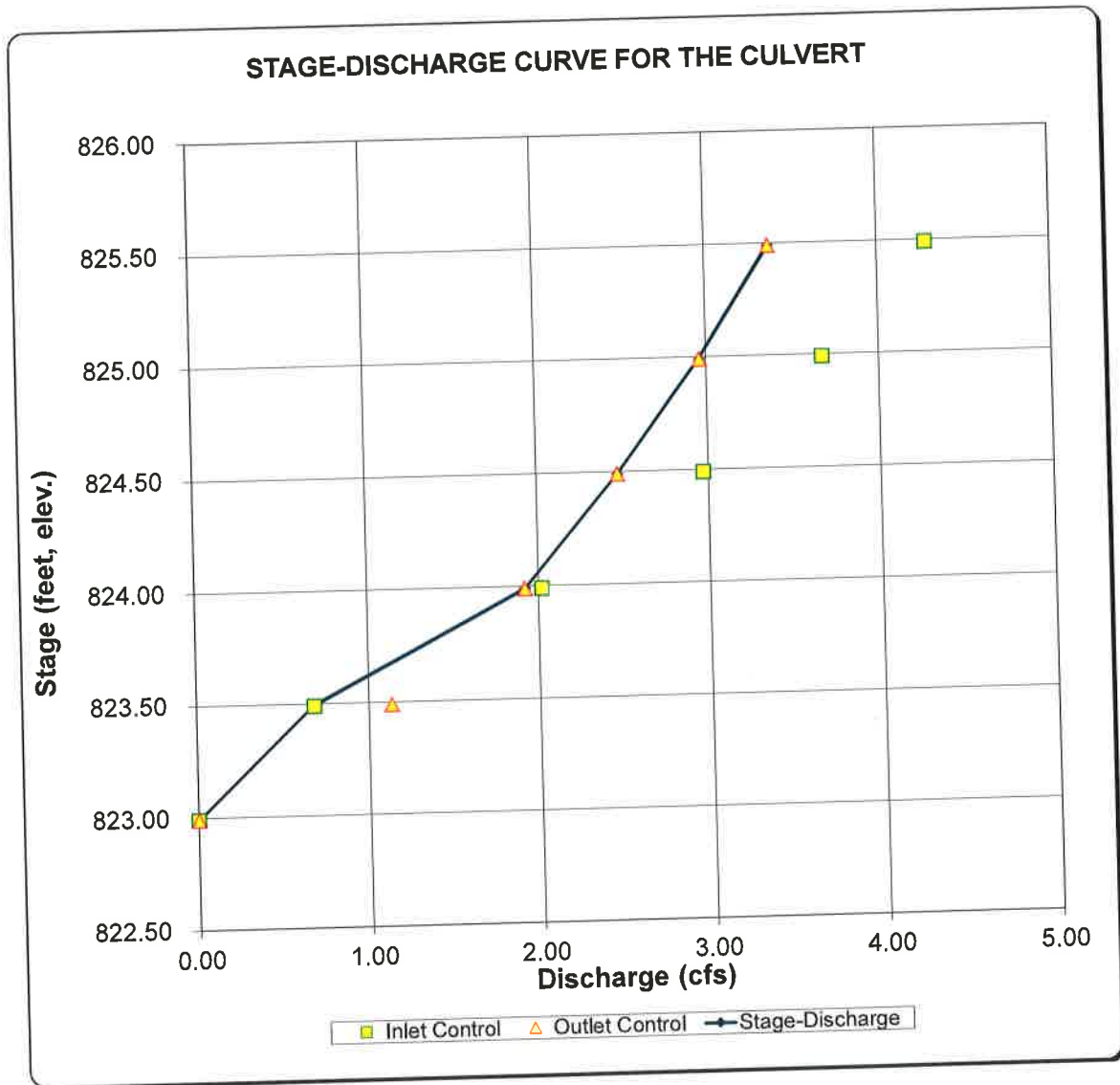
$K_e =$	0.20
$K_f =$	1.35
$K_a =$	2.55
$C_d =$	0.95
$KE_{low} =$	-0.6439

[illegible]

6/15/2015, 10:12 AM

CULVERT STAGE-DISCHARGE SIZING (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: Blue cells are for the user to enter data into
Basin ID: Green cells are calculated values, filled from the VB macro code



TEMPORARY SEDIMENT TRAP DESIGN: ST1

INPUTS:

Drainage Area $A_d := 1.45$ ac
Flow $Q := 6.8$ cfs for 2-Yr 24 Hour Storm Event

CALCULATIONS:

$$W_s := A \cdot 67 \quad W_s = 97.15 \text{ yd}^3$$

$$W_d := A \cdot 67 \quad W_d = 97.15 \text{ yd}^3$$

$$S_a := .01 \cdot Q \quad S_a = 0.068 \text{ ac}$$

$$S_{a.sf} := S_a \cdot 43560 \quad S_{a.sf} = 2962.08 \text{ ft}^2$$

$$W = \frac{\sqrt{3} \cdot \sqrt{S_{a.sf}}}{3} \quad W = 31.422 \text{ ft}$$

$$L = 3 \cdot W \quad L = 94.267 \text{ ft}$$

$$W_{s.req} := \frac{27 \cdot W_s}{L \cdot W} \quad W_{s.req} = 0.886$$

$$W_{d.req} := \frac{27 \cdot W_d}{L \cdot W} \quad W_{d.req} = 0.886$$

$$TS_{depth} := W_{d.req} + W_{s.req} \quad TS_{depth} = 1.771 \text{ ft}$$

TEMPORARY SEDIMENT TRAP DESIGN: ST2

INPUTS:

Drainage Area $A_d := 1.09$ ac
Flow $Q := 4.68$ cfs for 2-Yr 24 Hour Storm Event

CALCULATIONS:

$$\begin{aligned}W_s &:= A \cdot 67 & W_s &= 73.03 \text{ yd}^3 \\W_d &:= A \cdot 67 & W_d &= 73.03 \text{ yd}^3 \\S_a &:= .01 \cdot Q & S_a &= 0.047 \text{ ac} \\S_{a.s.f} &:= S_a \cdot 43560 & S_{a.s.f} &= 2038.608 \text{ ft}^2 \\W &:= \frac{\sqrt{3} \cdot \sqrt{S_{a.s.f}}}{3} & W &= 26.068 \text{ ft} \\L &:= 3 \cdot W & L &= 78.204 \text{ ft} \\W_{s.req} &:= \frac{27 \cdot W_s}{L \cdot W} & W_{s.req} &= 0.967 \\W_{d.req} &:= \frac{27 \cdot W_d}{L \cdot W} & W_{d.req} &= 0.967 \\TS_{depth} &:= W_{d.req} + W_{s.req} & TS_{depth} &= 1.934 \text{ ft}\end{aligned}$$

TEMPORARY SEDIMENT TRAP DESIGN: ST3

INPUTS:

Drainage Area $A := 0.62$ ac
Flow $Q := 2.75$ cfs for 2-Yr 24 Hour Storm Event

CALCULATIONS:

$$W_s := A \cdot 67 \qquad W_s = 41.54 \text{ yd}^3$$

$$W_d := A \cdot 67 \qquad W_d = 41.54 \text{ yd}^3$$

$$S_a := .01 \cdot Q \qquad S_a = 0.028 \text{ ac}$$

$$S_{a.sf} := S_a \cdot 43560 \qquad S_{a.sf} = 1197.9 \text{ ft}^2$$

$$W := \frac{\sqrt{3} \cdot \sqrt{S_{a.sf}}}{3} \qquad W = 19.982 \text{ ft}$$

$$L := 3 \cdot W \qquad L = 59.947 \text{ ft}$$

$$W_{s.req} := \frac{27 \cdot W_s}{L \cdot W} \qquad W_{s.req} = 0.936$$

$$W_{d.req} := \frac{27 \cdot W_d}{L \cdot W} \qquad W_{d.req} = 0.936$$

$$TS_{depth} := W_{d.req} + W_{s.req} \qquad TS_{depth} = 1.873 \text{ ft}$$



NOAA Atlas 14, Volume 2, Version 3
 Location name: Red Boiling Springs, Tennessee,
 US*
 Latitude: 36.6155°, Longitude: -85.7325°
 Elevation: 859 ft*
 * source: Google Maps



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.375 (0.340-0.414)	0.441 (0.401-0.487)	0.511 (0.464-0.564)	0.569 (0.515-0.626)	0.642 (0.578-0.706)	0.698 (0.625-0.768)	0.755 (0.673-0.831)	0.811 (0.717-0.893)	0.885 (0.773-0.976)	0.944 (0.817-1.04)
10-min	0.599 (0.543-0.662)	0.705 (0.641-0.779)	0.819 (0.743-0.903)	0.909 (0.824-1.00)	1.02 (0.921-1.13)	1.11 (0.995-1.22)	1.20 (1.07-1.32)	1.29 (1.14-1.42)	1.40 (1.22-1.54)	1.49 (1.29-1.65)
15-min	0.749 (0.679-0.827)	0.886 (0.806-0.980)	1.03 (0.940-1.14)	1.15 (1.04-1.27)	1.30 (1.17-1.43)	1.41 (1.26-1.55)	1.52 (1.35-1.67)	1.62 (1.43-1.79)	1.76 (1.54-1.94)	1.86 (1.62-2.06)
30-min	1.03 (0.930-1.13)	1.22 (1.11-1.35)	1.47 (1.33-1.62)	1.67 (1.51-1.84)	1.92 (1.73-2.11)	2.12 (1.90-2.33)	2.32 (2.07-2.56)	2.52 (2.23-2.78)	2.80 (2.45-3.09)	3.02 (2.62-3.34)
60-min	1.28 (1.16-1.41)	1.54 (1.40-1.70)	1.89 (1.71-2.08)	2.17 (1.97-2.39)	2.56 (2.30-2.81)	2.87 (2.57-3.16)	3.20 (2.85-3.52)	3.54 (3.13-3.90)	4.02 (3.52-4.43)	4.41 (3.82-4.88)
2-hr	1.51 (1.37-1.68)	1.80 (1.64-2.00)	2.21 (2.00-2.45)	2.54 (2.29-2.81)	3.02 (2.71-3.33)	3.41 (3.05-3.77)	3.84 (3.41-4.24)	4.29 (3.78-4.75)	4.95 (4.31-5.48)	5.49 (4.73-6.10)
3-hr	1.64 (1.48-1.83)	1.96 (1.77-2.18)	2.39 (2.16-2.66)	2.75 (2.48-3.06)	3.27 (2.93-3.63)	3.71 (3.31-4.11)	4.18 (3.70-4.63)	4.68 (4.11-5.19)	5.42 (4.69-6.01)	6.02 (5.16-6.71)
6-hr	2.00 (1.80-2.24)	2.38 (2.14-2.67)	2.89 (2.60-3.24)	3.34 (2.99-3.74)	3.99 (3.54-4.46)	4.53 (4.01-5.08)	5.13 (4.50-5.73)	5.77 (5.01-6.46)	6.71 (5.75-7.52)	7.51 (6.36-8.42)
12-hr	2.39 (2.17-2.65)	2.84 (2.58-3.16)	3.46 (3.14-3.84)	3.99 (3.61-4.42)	4.75 (4.28-5.27)	5.40 (4.83-5.98)	6.11 (5.41-6.76)	6.87 (6.03-7.60)	7.98 (6.89-8.85)	8.91 (7.60-9.92)
24-hr	2.92 (2.69-3.17)	3.48 (3.21-3.79)	4.25 (3.91-4.62)	4.89 (4.49-5.31)	5.79 (5.29-6.29)	6.54 (5.94-7.10)	7.33 (6.62-7.97)	8.16 (7.31-8.91)	9.36 (8.27-10.3)	10.3 (9.02-11.4)
2-day	3.51 (3.23-3.82)	4.18 (3.86-4.56)	5.13 (4.72-5.59)	5.92 (5.43-6.44)	7.04 (6.43-7.67)	7.97 (7.24-8.69)	8.96 (8.08-9.79)	10.0 (8.96-11.0)	11.5 (10.2-12.7)	12.8 (11.1-14.2)
3-day	3.74 (3.46-4.07)	4.47 (4.13-4.86)	5.46 (5.04-5.93)	6.27 (5.77-6.81)	7.41 (6.80-8.04)	8.35 (7.61-9.07)	9.34 (8.46-10.2)	10.4 (9.34-11.3)	11.9 (10.6-13.1)	13.1 (11.5-14.5)
4-day	3.98 (3.69-4.31)	4.75 (4.40-5.15)	5.79 (5.35-6.27)	6.63 (6.12-7.17)	7.79 (7.16-8.42)	8.73 (7.99-9.45)	9.71 (8.83-10.5)	10.8 (9.73-11.7)	12.3 (11.0-13.4)	13.5 (11.9-14.8)
7-day	4.80 (4.44-5.19)	5.72 (5.29-6.18)	6.97 (6.43-7.54)	8.00 (7.37-8.64)	9.45 (8.67-10.2)	10.6 (9.71-11.5)	11.9 (10.8-12.9)	13.2 (11.9-14.4)	15.1 (13.4-16.5)	16.6 (14.6-18.3)
10-day	5.49 (5.12-5.90)	6.54 (6.09-7.03)	7.89 (7.34-8.47)	8.96 (8.33-9.62)	10.4 (9.65-11.2)	11.6 (10.7-12.5)	12.8 (11.7-13.8)	14.0 (12.8-15.1)	15.7 (14.2-17.0)	17.1 (15.3-18.6)
20-day	7.52 (7.05-8.03)	8.92 (8.35-9.54)	10.5 (9.86-11.3)	11.8 (11.0-12.6)	13.4 (12.5-14.4)	14.7 (13.6-15.7)	15.9 (14.7-17.1)	17.1 (15.8-18.4)	18.7 (17.1-20.2)	19.9 (18.1-21.5)
30-day	9.26 (8.69-9.83)	10.9 (10.3-11.6)	12.8 (12.0-13.6)	14.2 (13.3-15.1)	16.1 (15.1-17.1)	17.5 (16.4-18.6)	18.9 (17.6-20.1)	20.3 (18.8-21.7)	22.1 (20.4-23.7)	23.5 (21.5-25.2)
45-day	11.7 (11.0-12.3)	13.7 (12.9-14.5)	15.8 (14.9-16.7)	17.4 (16.4-18.4)	19.5 (18.3-20.6)	21.0 (19.7-22.3)	22.5 (21.0-23.9)	24.0 (22.3-25.5)	25.8 (23.9-27.5)	27.1 (25.0-29.0)
60-day	14.0 (13.3-14.8)	16.5 (15.6-17.4)	18.9 (17.9-19.9)	20.7 (19.5-21.8)	22.9 (21.6-24.1)	24.5 (23.1-25.9)	26.0 (24.5-27.5)	27.5 (25.7-29.1)	29.2 (27.3-31.0)	30.4 (28.4-32.4)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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CONSTRUCTION SCHEDULE

1. Install stabilized construction entrance.
2. Install silt fence.
3. Install sediment traps or sediment basins
4. Begin clearing and grading.
5. Install proposed culverts.
6. Begin temporary seeding and mulching.
7. Final grading.
8. Final seeding and mulching.

SPECIFICATIONS

	<u>Pages</u>
Section 01 35 43 - Environmental Procedures.....	1-8
Section 01 41 26.13- Storm Water Pollution Prevention Plan.....	1-20
Section 31 35 13 - Slope Protection and Erosion Control.....	1-7
Section 32 92 19.21- Seeding, Fertilizer and Mulch.....	1-8

SECTION 01 35 43

ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.01 SCOPE

- A. The work covered by this section consists of furnishing all labor, materials and equipment, and performing all work required for the prevention of environmental pollution and the handling, removal, transportation and disposal of any hazardous and/or regulated solid waste generated during and as the result of construction operations under this contract except for those measures set forth in other provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents, which adversely affect human health or welfare; unfavorably alter ecological balances of importance to man; or degrade the utility of the environment for esthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land, and in solid waste-management, management of radiant energy and radioactive materials, as well as other pollutants including hazardous wastes, materials, substances and chemicals.

1.02 RELATED DOCUMENTS

- A. Section 31 11 00: Clearing and Grubbing ☐
- B. Section 31 23 36: Grading, Excavation and Backfill ☐

1.03 APPLICABLE REGULATIONS

- A. In order to prevent, and to provide for abatement and control of any environmental pollution arising from construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with all applicable Federal, State, and Local laws concerning environmental pollution control and abatement and any regulations referred to in the following paragraphs.
1. Tennessee Code Annotated, § 11-13-116 "Water Pollution Control."
 2. Tennessee General Permit No. TNR100000, "Storm Water Discharges from Construction Activities."
- B. For hazardous wastes, materials, substances and chemicals applicable regulations shall include, but are not limited to:
1. Tennessee Department of Environment and Conservation, Division of Solid Waste, TDEC Rule 1200-1-11 "Hazardous Waste Management Regulations."
 2. Tennessee Code Annotated, § 68-212 "Hazardous Waste Management"
 3. Code of Federal Regulations:
 - a. 29 CFR 1910.106 - "Flammable and Combustible Liquids."

hazardous substance spill, include in the Plan a Spill Reporting and Response Plan.

2. Procure applicable Federal, State and Local regulations on pollution control.
3. Air Pollution - Checks made on dust, smoke, and noise.
4. Water Pollution - Checks made on disposal of water, oil, etc.
5. Land Pollution - Checks made on disposal of debris, restoration of temporary construction sites, etc.
6. Training Course for Employees.

B. Reporting

1. The original and two copies of these records, as well as the records of corrective action taken, shall be furnished to the Engineer.

1.06 NOTIFICATION

- A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess cost of damages by the Contractor.

1.07 SUBCONTRACTORS

- A. Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1.08 IMPLEMENTATION

- A. Within 10 days after receipt of a Notice to Proceed, or otherwise directed below, the Contractor shall:
1. Submit a written proposal for implementing environmental pollution control at the project site, disposal of debris, non-hazardous wastes and hazardous wastes generated at the project site as well as storage and management of regulated materials, substances and chemicals brought onto and used at the project site.
 2. Meet with representatives of the Engineer to develop mutual understanding relative to compliance with this provision and administration of the environmental pollution control program.
 3. If applicable, submit a plan for the handling, removal, transportation and disposal of hazardous and/or regulated solid wastes generated because of the Contractor's operation.

excess or waste materials upon completion of construction. The Contractor will be required to restore the construction area to near natural conditions that will permit the growth of vegetation.

E. Recording and Preserving Historical and Archeological Finds

1. All items having any apparent historical or archeological interest that are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall leave the archeological find undisturbed and shall immediately report the find to the Engineer so that the proper authorities may be notified.

3.02 PROTECTION OF WATER RESOURCES

A. Contamination of Water

1. The Contractor shall not pollute lakes, ditches, rivers, canals, groundwater, waterways, or reservoirs with fuels, oils, bitumens, calcium chloride, insecticides, herbicides, or other similar materials harmful to fish, shellfish, or wildlife, or materials which may be a detriment to outdoor recreation.

B. Disposal of Materials

1. The methods and locations of disposal of materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., within the right-of-way limits shall be such that harmful debris will not enter lakes, ditches, rivers, canals, groundwater, waterways, or reservoirs by erosion, and thus prevent the use of the area for recreation or present a hazard to wildlife.

C. Erosion Control

1. Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall not exceed that necessary to perform the work. Stream crossings by fording with equipment shall be limited to control turbidity and in areas of frequent crossings temporary culverts or bridges shall be installed. Any temporary culverts or bridges shall be removed upon completion of the project. Fills and waste area shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.

3.03 PROTECTION OF FISH AND WILDLIFE

- A. The Contractor shall at all times perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area that are critical to fish or wildlife. Any time a colony of nesting birds is discovered in the course of any construction activities, the colony should not be disturbed (i.e., no work within 1,500 feet), and the Contractor shall immediately report the findings to the

B. Hazardous Waste

1. For the handling, removal, transportation and disposal of any generated hazardous waste, the plan shall conform to the requirements of 29 CFR 1910.120. All employees of the Contractor or subcontractors that will be directly involved in the handling and/or removal of hazardous wastes shall be trained in accordance with 29 CFR 1910.1200. In addition, the employees shall have undergone a medical evaluation in accordance with 29 CFR 1910.1200. The Contractor shall include copies of employees' certifications and medical examinations as part of the plan specified herein. The plan shall also address the proper Personnel Protective Equipment (PPE) that the employees will be required to wear during the handling and removal of hazardous wastes. The Contractor shall obtain an EPA ID# and Hazardous Waste Disposal Manifests and shall sign the manifests as the generator. Wastes shall be transported via State and Federal approved hazardous waste transporter and disposed of at a State and Federal approved temporary, storage and disposal (TSD) facility. Copies of licenses and certifications of the transporter and TSD shall be included in the plan. The plan shall list the name and address of each transporter and TSD to be utilized. The Contractor shall be responsible for any sampling and analysis required by the TSD for characterization purposes. The Contractor shall submit to the Engineer completed copies of all Hazardous Waste Disposal Manifests within five (5) days after ultimate disposal at the TSD. Other regulations applicable to the handling, removal, transportation and disposal of hazardous wastes are: 40 CFR 261 "Identification and Listing of Hazardous Wastes"; 40 CFR 262 "Standard Applicable to Generators of Hazardous Wastes"; 40 CFR 268 "Land Disposal Restrictions".

C. Regulated Solid Wastes

1. For the handling, removal, transportation and disposal of any generated regulated solid wastes, the plan shall conform to the requirements of the TDEC Rule 1200-1-11. Solid wastes shall be transported to a Federal and State approved TSD, oil recycler or Industrial Type Landfill. The Contractor shall identify in the plan how he/she intends to dispose of each solid waste. The plan shall include the name, address, licenses and certifications of each disposal facility that will be used. If disposal manifests are required, the Contractor shall sign them as the generator. The Contractor shall be responsible for sampling and analyses that may be required by the disposal facility(ies) for characterization purposes. Licenses and certifications of the transporter and disposal facilities shall be included in the plan. The Contractor shall submit to the Engineer a completed copy of any waste disposal manifests within five (5) days after ultimate disposal.

D. Laboratory Accreditation.

1. All laboratory testing for waste determination shall be performed by a laboratory which is approved by the Tennessee Department of Environment and Conservation. The name and address of the laboratory shall be included in the Waste Classification, Handling, and Disposal Plan.

3.07 MAINTENANCE OF POLLUTION CONTROL FACILITIES

- A. During the life of this contract, the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to

SECTION 01 35 43
ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.01 SCOPE

- A. The work covered by this section consists of furnishing all labor, materials and equipment, and performing all work required for the prevention of environmental pollution and the handling, removal, transportation and disposal of any hazardous and/or regulated solid waste generated during and as the result of construction operations under this contract except for those measures set forth in other provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents, which adversely affect human health or welfare; unfavorably alter ecological balances of importance to man; or degrade the utility of the environment for esthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land, and in solid waste-management, management of radiant energy and radioactive materials, as well as other pollutants including hazardous wastes, materials, substances and chemicals.

1.02 RELATED DOCUMENTS

- A. Section 31 11 00: Clearing and Grubbing ☐
- B. Section 31 23 36: Grading, Excavation and Backfill ☐

1.03 APPLICABLE REGULATIONS

- A. In order to prevent, and to provide for abatement and control of any environmental pollution arising from construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with all applicable Federal, State, and Local laws concerning environmental pollution control and abatement and any regulations referred to in the following paragraphs.
1. Tennessee Code Annotated, § 11-13-116 "Water Pollution Control."
 2. Tennessee General Permit No. TNR100000, "Storm Water Discharges from Construction Activities."
- B. For hazardous wastes, materials, substances and chemicals applicable regulations shall include, but are not limited to:
1. Tennessee Department of Environment and Conservation, Division of Solid Waste, TDEC Rule 1200-1-11 "Hazardous Waste Management Regulations."
 2. Tennessee Code Annotated, § 68-212 "Hazardous Waste Management"
 3. Code of Federal Regulations:
 - a. 29 CFR 1910.106 - "Flammable and Combustible Liquids."

hazardous substance spill, include in the Plan a Spill Reporting and Response Plan.

2. Procure applicable Federal, State and Local regulations on pollution control.
3. Air Pollution - Checks made on dust, smoke, and noise.
4. Water Pollution - Checks made on disposal of water, oil, etc.
5. Land Pollution - Checks made on disposal of debris, restoration of temporary construction sites, etc.
6. Training Course for Employees.

B. Reporting

1. The original and two copies of these records, as well as the records of corrective action taken, shall be furnished to the Engineer.

1.06 NOTIFICATION

- A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess cost of damages by the Contractor.

1.07 SUBCONTRACTORS

- A. Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1.08 IMPLEMENTATION

- A. Within 10 days after receipt of a Notice to Proceed, or otherwise directed below, the Contractor shall:
1. Submit a written proposal for implementing environmental pollution control at the project site, disposal of debris, non-hazardous wastes and hazardous wastes generated at the project site as well as storage and management of regulated materials, substances and chemicals brought onto and used at the project site.
 2. Meet with representatives of the Engineer to develop mutual understanding relative to compliance with this provision and administration of the environmental pollution control program.
 3. If applicable, submit a plan for the handling, removal, transportation and disposal of hazardous and/or regulated solid wastes generated because of the Contractor's operation.

excess or waste materials upon completion of construction. The Contractor will be required to restore the construction area to near natural conditions that will permit the growth of vegetation.

E. Recording and Preserving Historical and Archeological Finds

1. All items having any apparent historical or archeological interest that are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall leave the archeological find undisturbed and shall immediately report the find to the Engineer so that the proper authorities may be notified.

3.02 PROTECTION OF WATER RESOURCES

A. Contamination of Water

1. The Contractor shall not pollute lakes, ditches, rivers, canals, groundwater, waterways, or reservoirs with fuels, oils, bitumens, calcium chloride, insecticides, herbicides, or other similar materials harmful to fish, shellfish, or wildlife, or materials which may be a detriment to outdoor recreation.

B. Disposal of Materials

1. The methods and locations of disposal of materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., within the right-of-way limits shall be such that harmful debris will not enter lakes, ditches, rivers, canals, groundwater, waterways, or reservoirs by erosion, and thus prevent the use of the area for recreation or present a hazard to wildlife.

C. Erosion Control

1. Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall not exceed that necessary to perform the work. Stream crossings by fording with equipment shall be limited to control turbidity and in areas of frequent crossings temporary culverts or bridges shall be installed. Any temporary culverts or bridges shall be removed upon completion of the project. Fills and waste area shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.

3.03 PROTECTION OF FISH AND WILDLIFE

- A. The Contractor shall at all times perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area that are critical to fish or wildlife. Any time a colony of nesting birds is discovered in the course of any construction activities, the colony should not be disturbed (i.e., no work within 1,500 feet), and the Contractor shall immediately report the findings to the

B. Hazardous Waste

1. For the handling, removal, transportation and disposal of any generated hazardous waste, the plan shall conform to the requirements of 29 CFR 1910.120. All employees of the Contractor or subcontractors that will be directly involved in the handling and/or removal of hazardous wastes shall be trained in accordance with 29 CFR 1910.1200. In addition, the employees shall have undergone a medical evaluation in accordance with 29 CFR 1910.1200. The Contractor shall include copies of employees' certifications and medical examinations as part of the plan specified herein. The plan shall also address the proper Personnel Protective Equipment (PPE) that the employees will be required to wear during the handling and removal of hazardous wastes. The Contractor shall obtain an EPA ID# and Hazardous Waste Disposal Manifests and shall sign the manifests as the generator. Wastes shall be transported via State and Federal approved hazardous waste transporter and disposed of at a State and Federal approved temporary, storage and disposal (TSD) facility. Copies of licenses and certifications of the transporter and TSD shall be included in the plan. The plan shall list the name and address of each transporter and TSD to be utilized. The Contractor shall be responsible for any sampling and analysis required by the TSD for characterization purposes. The Contractor shall submit to the Engineer completed copies of all Hazardous Waste Disposal Manifests within five (5) days after ultimate disposal at the TSD. Other regulations applicable to the handling, removal, transportation and disposal of hazardous wastes are: 40 CFR 261 "Identification and Listing of Hazardous Wastes"; 40 CFR 262 "Standard Applicable to Generators of Hazardous Wastes"; 40 CFR 268 "Land Disposal Restrictions".

C. Regulated Solid Wastes

1. For the handling, removal, transportation and disposal of any generated regulated solid wastes, the plan shall conform to the requirements of the TDEC Rule 1200-1-11. Solid wastes shall be transported to a Federal and State approved TSD, oil recycler or Industrial Type Landfill. The Contractor shall identify in the plan how he/she intends to dispose of each solid waste. The plan shall include the name, address, licenses and certifications of each disposal facility that will be used. If disposal manifests are required, the Contractor shall sign them as the generator. The Contractor shall be responsible for sampling and analyses that may be required by the disposal facility(ies) for characterization purposes. Licenses and certifications of the transporter and disposal facilities shall be included in the plan. The Contractor shall submit to the Engineer a completed copy of any waste disposal manifests within five (5) days after ultimate disposal.

D. Laboratory Accreditation.

1. All laboratory testing for waste determination shall be performed by a laboratory which is approved by the Tennessee Department of Environment and Conservation. The name and address of the laboratory shall be included in the Waste Classification, Handling, and Disposal Plan.

3.07 MAINTENANCE OF POLLUTION CONTROL FACILITIES

- A. During the life of this contract, the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to

SECTION 01 41 26.13

STORM WATER POLLUTION PREVENTION PLAN

PART 1 - GENERAL

1.01 SCOPE

- A. The work specified in this section consists of the Contractor implementing, and diligently pursuing all measures required in the **Storm Water Pollution Prevention Plan (SWPPP)**. The SWPPP consists of this Section, 01 41 26.13, and any and all attachments including existing and future signed certification statements. The purpose of the SWPPP is to control soil erosion and the resulting sediment to the extent necessary to prevent sediment from leaving the contract rights-of-way and prevent pollution of any water body caused by the runoff from the areas of construction activities under this contract, under the terms of Tennessee General Permit No. TNR100000, Storm Water Discharges From Construction Activities (PERMIT), and as specified herein and shown on the drawings. The requirements of these specifications are supplemental to and shall become part of the overall Environmental Protection Plan required by Section 01 35 43 - "Environmental Procedures." The Contractor shall review the SWPPP to determine requirements for compliance. In addition, the Contractor shall ascertain that his subcontractors have reviewed the Plan, and that they comply with its provisions. The Contractor shall ensure that all subcontractors sign the Certification Statement.

1.02 RELATED DOCUMENTS

- A. Section 01 35 43: Environmental Procedures ☒
- B. Section 31 35 13: Slope Protection and Erosion Control ☒
- B. Section 32 92 19.21: Seeding, Fertilizer and Mulch ☒

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.
1. ASTM D-4491 - Water Permeability of Geotextiles by Permittivity.
 2. ASTM D-4533 - Trapezoid Tearing Strength of Geotextiles.
 3. ASTM D-4632 - Grab Breaking Load and Elongation of Geotextiles.
 4. ASTM D-4751 - Determining Apparent Opening Size of Geotextile.
 5. ASTM D-4873 - Identification, Storage, and Handling of Geosynthetic Rolls.
 6. Storm Water General Permit for Construction Activities - Tennessee General Permit No. TNR 10-0000.

copy of the Contractor's NOI submittal shall be provided to the Engineer at the time of submittal. TDEC will provide a specific permit to the Contractor in response to that NOI submittal. The NOI's of both the Contractor and the Owner, as well as the specific permits in response to the NOI, shall be posted at the job site by the Contractor.

1.07 SUBMITTALS

A. Certificates

1. The Contractor shall submit the Manufacturer's certification of compliance for the geotextile used on the silt fence. All brands of geotextile that are used in construction shall be accepted on the following basis:
 - a. At least **30 days** prior to installation, the Contractor shall furnish to the Engineer, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile.
 - b. The certificate shall contain the signer's title, the name and address of the Contractor, the contract number, and the project name and location.
 - c. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical, and manufacturing requirements stated in this specification.
 - d. Geotextiles shall not be delivered to the site until the geotextile certificates are approved by the Engineer.

B. Samples

1. A 4-foot by 12-foot sample of each geotextile that the Contractor plans to use shall accompany the certificate. If seams are to be used, then an additional 4-foot by 12-foot sample of each geotextile containing a sample seam in the center of the geotextile sample shall be submitted with the certificate. Geotextile shall not be delivered to the site until the geotextile samples are approved by the Engineer.

1.08 RECORD RETENTION REQUIREMENTS

- A. Records of the NOI as well as any data used to complete it, the SWPPP, and any reports required by the PERMIT shall be retained by the permittee for at least **three years** from the date that the site is finally stabilized. Certification of the SWPPP by the Contractor or any sub-contractor is required in accordance with the PERMIT. Copies of required certifications are attached at the end of this section.
- B. A copy of the SWPPP required by the PERMIT, including a copy of the permit language, shall be retained at the construction site (or other local location accessible to TDEC and the public) from the date of construction initiation to the date of stabilization. The permittee with day-to-day operational control over SWPPP implementation shall have a copy of the Plan available at a central location on-site for the use of all operators and those identified as having responsibilities under the Plan whenever they are on the construction site. A notice shall be posted near the main entrance to the construction site with the following information: (1) the PERMIT number for the project or a copy of the NOI if a permit has not yet been assigned; (2) the name and telephone number of a local contact person; (3) a brief description of the project; and (4) the location of the SWPPP if the site is inactive or does not have an on-site location to store the Plan.

activity is temporarily ceased is less than **15 days**), then stabilization practices do not have to be initiated on that portion of the site by the **7th day** after construction activity temporarily ceased. Stabilization practices shall be initiated on that portion of the site by the **7th day** in the case where construction activities will not resume within **15 days** after construction activities have ceased.

2. Structural Controls

- a. Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Location and details of installation and construction are shown on the drawings.
 - (1) Silt Fence Barrier - The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed, as shown on the contract drawings, to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g., clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. Final removal of silt fence barriers shall be upon approval by the Engineer.

PART 2 - PRODUCTS

2.01 COMPONENTS FOR SILT FENCE BARRIER

A. Filter Fabric

1. The geotextile shall comply with the requirements of the following table, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures:

1. Silt Fence and Straw Bale Barrier Maintenance

- a. Silt fences shall be inspected in accordance with Section 3.04. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. Sediments shall be utilized in the job or disposed of as construction debris. When a silt fence or straw bale is no longer required, it shall be removed. The immediate area and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with specifications noted on Project plans.

3.04 INSPECTIONS

- A. The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and areas where vehicles exit the site **twice weekly**, before anticipated storm events (or series of storm events such as intermittent showers over one or more days) expected to cause a significant amount of runoff, and within **24 hours** of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least **once every month** if runoff unlikely due to weather (snow, frozen ground, etc.).
- B. Inspections
 1. Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.
 2. For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, maintenance performed, and actions taken. The report shall be furnished to the **TDEC within 24 hours** of the inspection as a part of the Contractor's daily report. A copy of the inspection report shall be maintained on the job site. Sample inspection reports are included at the end of this section.

3.05 NOTICE OF TERMINATION

- A. Upon stabilization and elimination of all storm water discharges authorized by the PERMIT, or where the operator of all storm water discharges at a facility changes, a Notice of Termination (NOT) shall be certified and submitted by the Contractor to the

POLLUTION PREVENTION PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under by direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____
(Owner)

Date: _____

CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements.

Signature

For

Responsible for

(Name & Title)

(Company & Address)

General Contractor

(Name & Title)

(Company & Address)

General Contractor

(Name & Title)

(Company & Address)

General Contractor

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE: _____

EARTH DIKE:

FROM	TO	IS DIKE STABILIZED	IS THERE EVIDENCE OF WASHOUT OR OVER-TOPPING?

MAINTENANCE REQUIRED FOR EARTH DIKE:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

REASONS FOR CHANGES:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: _____ DATE: _____

SECTION 31 35 13

SLOPE PROTECTION AND EROSION CONTROL

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. This section shall consist of temporary and/or permanent control measures as shown in the plans or directed by the Engineer during the life of the Contract to control erosion and water pollution, through the use of berms, dikes, dams, sediment basins, fiber mats, netting, mulches, grasses, slope drains, temporary silt fences, and other control devices.
- B. The temporary pollution control provisions contained herein shall be coordinated with the permanent erosion control features, to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.
- C. This section shall be utilized by the contractor to prepare and submit to the Engineer a Stormwater Control Plan as required by Federal and State Regulations. The Contractor will be responsible for meeting all of the requirements for stormwater permitting if the project will consist of more than one (1) acres of disturbed area.
- D. The Contractor shall perform all work in strict accordance with any Aquatic Resources Alteration Permits, Army Corps of Engineers 404 Permits, TVA 26A Permits, and any other Environmental Permits issued for the project.

1.02 RELATED DOCUMENTS

- A. Section 31 11 00: Clearing and Grubbing. ☐
- B. Section 31 23 36: Grading, Excavation, and Backfill. ☐
- C. Section 32 92 19.21: Seeding, Fertilizer, and Mulch. ☒

1.03 REFERENCES

- A. Tennessee Erosion & Sediment Control Handbook, Tennessee Department of Environment and Conservation, Latest Edition.
- B. Tennessee Rule 1200-4-10.

PART 2 – PRODUCTS

2.01 TEMPORARY BERMS

- A. A temporary berm is constructed of compacted soil, with or without a shallow ditch, at the top of fill slopes of transverse to centerline on fills.
- B. These berms are used temporarily at the top of newly constructed slopes to prevent excessive erosion until permanent controls are installed or slopes stabilized.

2.08 TEMPORARY SILT FENCES

- A. Silt fences are temporary measures utilizing woven wire or other approved material attached to posts with filter cloth composed of burlap, plastic filter fabric, etc., attached to the upstream side of the fence to retain the suspended silt particles in the run-off water.

2.09 SANDBAG COFFERDAMS

- A. Cofferdams shall be constructed as detailed in plans whenever a stream crossing is required or work is necessary in a stream channel.

2.10 RIPRAP

- A. Riprap is a permanent, erosion-resistant ground cover of large, loose, angular stone. This method is utilized to protect the soil surface from the erosive forces of concentrated runoff; to slow the velocity of concentrated runoff while enhancing the potential for infiltration; and to stabilize slopes with seepage problems and/or non-cohesive soils. Riprap, as appropriate, may be used at storm drain outlets, on channel banks and/or bottoms, roadside ditches, drop structures, at the toe of slopes, etc.

PART 3 – EXECUTION

3.01 PROJECT REVIEW

- A. Prior to the Preconstruction Conference, the Contractor shall meet with the Engineer and go over in detail the expected problem areas in regard to the erosion control work. Different solutions should be discussed so that the best method might be determined. It is the basic responsibility of the Contractor to develop and submit an erosion control plan acceptable to the Engineer.

3.02 PRECONSTRUCTION CONFERENCE

- A. At the Preconstruction Conference, the Contractor shall submit for acceptance a Stormwater Control Plan, which includes his schedule for accomplishment of temporary and permanent erosion control work, as are applicable for clearing and grubbing, grading, bridges and other structures at watercourses, construction, and paving. He shall also submit for acceptance his proposed method of erosion control on haul roads and borrow pits and his plan for disposal of waste materials. No work shall be started until the erosion control schedules and methods of operations have been accepted by the Engineer.

3.03 CONSTRUCTION REQUIREMENTS

- A. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface of erodible earth material exposed by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other water impoundment. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut and fill slopes shall be seeded and mulched as the excavation proceeds to the extent directed by the Engineer.

materials which can be used as temporary measures to carry water accumulating in the cuts and on the fills down the slopes prior to installation of permanent facilities or growth of adequate ground cover on the slopes.

2. Fiber matting and plastic sheeting shall not be used on slopes steeper than 4:1, except for short distances of 20 feet or less.
3. All slope drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing in the drains. The base for slope drains shall be compacted and concavely formed to channel the water or hold the slope drain in place. The inlet end shall be properly constructed to channel water into the slope drain. Energy dissipaters, sediment basins, or other approved devices shall be constructed at the outlet end of the slope drains to reduce erosion downstream. An ideal dissipater would be dumped rock or a small sediment basin, which would slow the water as well as pick up some sediment. All slope drains shall be removed when no longer necessary and the site restored to match the surroundings.

C. Sediment Structures

1. Sediment structures shall be utilized to control sediment at the foot of embankments where slope drains outlet; at the bottom as well as in the ditch lines atop waste sites; in the ditch lines or borrow pits. Sediment structures may be used in most drainage situations to prevent excessive siltation of pipe structures. All sediment structures shall be at least twice as long as they are wide.
2. When use of temporary sediment structures is to be discontinued, all sediment accumulation shall be removed, and all excavation backfilled and properly compacted. The existing ground shall be restored to its natural or intended condition.

D. Check Dams

1. Check dams shall be utilized to retard stream flow and catch small sediment loads. Materials utilized to construct check dams are varied and should be clearly illustrated or explained in the Contractor's erosion control plan.
2. All check dams shall be keyed into the sides and bottom of the channel a minimum depth of 2 feet. A design is not needed for check dams but some typical designs are shown in the standard plans
3. Stone check dams should generally not be utilized where the drainage area exceeds fifty (50) acres. Log and pole structures should generally not be used where the drainage area exceeds five (5) acres.

E. Temporary Seeding and Mulching

1. Seeding and mulching shall be performed in accordance with the Section 32 92 19.21 "Seeding, Fertilizer and Mulch."

F. Brush Barriers

1. Brush barriers shall consist of brush, tree trimmings, shrubs, plants and other approved refuse from the clearing and grubbing operation. The brush barriers shall be constructed approximately parallel to original ground contour. The brush

4. Where riprap is used only for bank protection and does not extend across the bottom of the channel, riprap shall be keyed into the bottom of the channel to a minimum depth equal to the thickness of the blanket and shall extend across the bottom of the channel the same distance.

3.05 MAINTENANCE

- A. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or permanent erosion control methods are installed. Temporary controls shall subsequently be removed or replaced when directed by the Engineer. Temporary and permanent erosion control features shall be checked after each measurable rainfall and re-established as necessary. All temporary erosion control items shall be removed before the project is accepted, unless otherwise directed by the Engineer. Removed materials shall become the property of the Contractor.
- B. If proper control of soil erosion and sedimentation is not being provided by the Contractor, the Engineer may withhold progress estimates until proper control is achieved.
- C. In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense.
- D. Where the work to be performed is not attributed to the Contractor's negligence, carelessness, or failure to install permanent controls and falls within the specifications for work items that has a contract price, the units of work shall be paid for at the proper contract prices.
- E. The Contractor shall maintain project records on stormwater structures as required by regulations.

3.06 EROSION CONTROL OUTSIDE PROJECT AREA

- A. Temporary pollution control shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads and equipment storage sites. Bid price in such cases shall include all necessary clearing and grubbing, construction incidentals, maintenance, and site restoration when no longer needed.

***** END OF SECTION *****

SECTION 32 92 19.21

SEEDING, FERTILIZER AND MULCH

PART 1 – GENERAL

1.01 DESCRIPTION

- A. This item shall consist of seeding the areas shown on the plans or as directed by the Engineer in accordance with these specifications.
- B. Seeding will include:
 - Class I seed ☐
 - or
 - Class II seed ☒
- C. Erosion Control Blanket ☐

1.02 RELATED WORK

- A. Test Reports: Results of seed purity and germination tests.
- B. Certificates: Manufacturer's certification that materials meet specification requirements.

1.03 JOB CONDITIONS

- A. This work is applicable only to areas disturbed or graded under the construction contract and where no grass occurs on existing lawn areas.
- B. Existing Conditions: Perform seeding only after preceding work affecting ground surface is completed.
- C. Environmental Requirements:
 - 1. Plant seed on unfrozen soil.
 - 2. Do not perform seeding when wind exceeds 15 mph.
 - 3. Do not seed between calendar dates from October 15th to March 15th.
- D. Protection: Restrict foot and vehicular traffic from seeded areas after planting to end of the established period.

PART 2 – PRODUCTS

2.01 SEED

- A. The kinds of grass, legume, and cover-crop seed furnished shall be those stipulated below. Seed shall conform to the requirements of Fed. Spec. JJJ-S-181.

B. The fertilizers may be supplied in one of the following forms:

1. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader.
2. A finely-ground fertilizer soluble in water, suitable for application by power sprayers.
3. A granular or pellet form suitable for application by blower equipment.

2.03 AGRICULTURAL LIMESTONE

A. Agricultural Ground Limestone should be applied at the rate of 3 tons/acre.

2.04 SURFACE EROSION CONTROL MATERIAL

A. Surface erosion control material shall conform to the following:

1. Surface Erosion Control Blanket - Blanket shall be machine produced mat of wood excelsior formed from a web of interlocking wood fibers; covered on one side with either knitted straw blanket-like mat construction; covered with biodegradable plastic mesh; or interwoven biodegradable thread, plastic netting, or twisted kraft paper cord netting.
2. Surface Erosion Control Fabric - Fabric shall be knitted construction of polypropylene yarn with uniform mesh openings $\frac{3}{4}$ to 1-inch square with strips of biodegradable paper. Filler paper strips shall have a minimum life of 6 months.
3. Surface Erosion Control Net - Net shall be heavy, twisted jute mesh, weighing approximately 1.22 pounds per linear yard and 4-feet wide with mesh openings of approximately 1-inch square.
4. Surface Erosion Control Chemicals - Chemicals shall be high-polymer synthetic resin or cold-water emulsion of selected petroleum resins.
5. Hydrophilic Colloids - Hydrophilic colloids shall be physiologically harmless to plant and animal life without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids shall resist mold growth.
6. Erosion Control Material Anchors - Erosion control anchors shall be as recommended by the Manufacturer.

PART 3 – EXECUTION

3.01 SOIL FOR REPAIRS

- A. Shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the Engineer before being placed.

3.03 DRY APPLICATION METHOD

- A. Fertilizing – Following advance preparations and cleanup, fertilizer shall be uniformly spread at the rate specified.
- B. Seeding – Grass seed shall be sown at the rate of 50 lbs. per acre immediately after fertilizing, and the fertilizer and seed shall be raked within the depth range of $\frac{1}{8}$ to $\frac{1}{4}$ inch. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.
- C. Rolling – After the seed has been properly covered, the seed bed shall be immediately compacted by means of an approved lawnroller, weighing 40 to 65 pounds per foot of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot of width for sandy or light soils.

3.04 WET APPLICATION METHOD

- A. General – The Contractor may elect to apply seed and fertilizer by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using methods and equipment described herein. The rates of application shall be as specified in Section 3.03 of these specifications. No seed shall be placed on a frozen seedbed.
- B. Spraying Equipment – The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.
 - 1. The unit shall also be equipped with a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 pounds per square inch. The pump shall be mounted in a line, which will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for $\frac{5}{8}$ inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be a pressure gauge connected and mounted immediately at the back of the nozzle.
 - 2. The nozzle pipe shall be mounted on an elevated, supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 feet to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

- b. Light disking to produce a very thin covering of topsoil.
- c. Asphalt emulsion applied at a rate of 60 gallons per ton of mulch.
- d. Place mulching cloth over seeded area with slopes steeper than 2 to 1.

D. SURFACE EROSION CONTROL MATERIAL

- 1. Where indicated or as directed, surface erosion control material shall be installed in accordance with Manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

E. MAINTENANCE OF SEEDED AREAS

- 1. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.
- 2. When either the dry or wet application method outlined above is used for work done out of season, between October 15 and March 15, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If, at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

3.06 EROSION CONTROL EXCELSIOR BLANKET

A. Installation

- 1. Install Erosion Control Blanket on permanently seeded areas constructed on a slope of 3 feet horizontal to one foot vertical on slopes when indicated as a construction requirement in Part 1.01.
- 2. Properly prepare, fertilize and seed area to be covered before blanket is applied. When the blanket is unrolled, netting should be on top and fibers in contact with the soil over the entire area. In ditches, apply blankets in the direction the water flows, butting them at the ends and sides and then stapling. On slopes, apply blankets either horizontally or vertically to slope butt ends and sides and then staple. It is not necessary to dig check slots, anchor ditches or bury ends of blankets unless specified in design specifications.
- 3. Install material in accordance with manufacturer's recommendation.
- 4. Secure blanket material with U shaped 0.091" diameter wire with legs six inches in length. Drive staples vertically into the ground at six foot intervals on slopes and four foot intervals along ditches.
- 5. Use a common row of staples on adjoining blankets.